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ABSTRACT

With a sample of 168 educable mentally retarded adolescents, the authors used an interview technique and a battery of standardized instruments to ascertain sex and racial differences. Significant sex and/or racial differences were found in vocational interest areas, motor skills, achievement levels, and mechanical aptitude. Recommended were picture-type vocational interest measures and prevocational as well as realistic vocational counseling. (Author)

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"APTITUDES, VOCATIONAL INTEREST AREAS, AND STATED VOCATIONAL PREFERENCES FOR MENTALLY RETARDED ADOLESCENTS"

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SUMMARY

Assuming that mentally retarded adolescents do not perceive the difference between job aspirations and job expectations, the investigators have developed an interview technique to assess vocational interests. A battery of standardized vocational and educational instruments was also administered to 168 mentally retarded adolescents. The sample included blacks and whites as well as males and females. Although some significant group differences were found with various vacational measures, the investigators caution that counseling must be done on an individual basis. The investigators recommend picture-type tests and avocational as well as realistic vocational counseling for the retarded.

INTRODUCTION:

Those who work in the area of vocational counseling of the mentally retarded recognize the pitfalls involved in gathering valid information, both from standardize instruments and from interviews. Inability to attend, follow directions, to read with comprehension, and to understand vocabulary used by the examiner are some of the factors that must be considered. Results of previous research on the occupational interests and aspirations of the retarded has been conflicting. Sears (1940) and Ringness (1961) found that many retarded children were unrealistic in self appraisal and occupational adequacy. Knight (1972), however, found that retarded boys had realistic occupational expectations. A basic assumption of the study which follows is that mentally retarded individuals do not perceive the difference between vocational aspirations and vocational expectations.

PROBLEM:

The problem was (1) to ascertain sex and racial differences in performance on selected vocational measures and (2) to develop an interview technique which would provide data to the counselor which would be useful in helping mentally retarded adolescents make realistic vocational decisions.

SAMPLE:

The sample consisted of 168 adolescents from central North Carolina who had been diagnosed or referred as suspected mentally retarded and thereby eligible for Vocational Rehabilitation services. A total of 76 females (33 white and 43 black) and 92 males (46 white and 46 black) were included. Ages ranged from 13 years to 19 years, with the majority falling within the 15 to 17 year age range.

PROCEDURE:

The following instruments were administered by the investigator in a school setting: Weschsler (WISC or WAIS), California Picture Interest Inventory (CPII), Wide Range Achievement Test (WRAT), Bennett Mechanical Comprehension Test (BCMT), Differential Aptitude Tests: Clerical Speed and Accuracy (DAT:C&S), Stromberg Test of Manual Dexterity (STMD), Purdue Pegboard (PPB), and others. The Wechsler Scale, the two dexterity measures, and the reading portion of the WRAT were administered individually. On tests where reading was involved, the questions were presented on cassette tape while the subjects listened through earphones.

A t-test of means was used to ascertain differences between test results of females (black and white) and males (black and white).

Subjects were interviewed by the investigators and asked the following questions: "What kind of work would you like to do when you finish school?" "Would you like to work indoors or outdoors, or doesn't it make any difference?" "Do you want a job where you work with other people, where you work by yourself, or part of the time with people and part of the time by yourself?" "What are your hobbies: what do you like to do just to have fun?" Job selections were classified according to levels delineated by the U.S. Census and also according to skill levels.

RESULTS:

(SEE TABLE I and II)

A. A wide range of interest areas, as measured by the CPII, was found among all groups. Mean results concerning specific vocational areas are as follows:

Males

1. Both black and white males indicated average interest in Interpersonal Service, Natural, Business, Esthetic, Verbal and Computational areas.
2. Black males indicated above average interest in Esthetic areas; while white males indicated average interest in this area. The difference was significant.
3. Both black and white males indicated below average interest in Scientific areas.

Females

1. Both black and white females indicated average interest in Interpersonal Service, Natural, Business, Esthetic, Verbal and Computational areas.
2. Black females indicated below average interest in Mechanical areas; while white females indicated low average interest in this area. The difference was not significant.
3. Black females indicated average interest in Scientific areas; while white females indicated below average interest in this area. The difference was significant.

(SEE TABLE III)

B. Mean results concerning mechanical comprehension, as measured by the BMCT, are as follows:

1. Males, both black and white, scored higher than females, both black and white. The difference was significant.
2. Scores were generally low for both sexes, regardless of race.

C. Results of clerical speed and accuracy, as measured by the DAT, CS&A are as follows:

1. All groups scored below average.
2. No significant race or sex differences were found between any of the sub-group.

(SEE TABLE IV)

D. Results of motor abilities, as measured by the STMD and the PPB, are as follows:

1. A wide range of motor abilities was found in males and females both black and white; however, scores were generally below the mean.
2. For all groups, higher scores were generally obtained for fine finger dexterity than for gross arm dexterity.

(SEE TABLE V)

E. Achievement in reading, spelling and arithmetic, as measured by the WRAT, is as follows:

1. Females of both races scored higher than males of both races in reading.
2. Based on Wechsler Scale IQ's mean achievement is all three areas was below theoretical grade level expectations.

(SEE TABLE VI)

F. Results concerning stated vocational preferences obtained from interviews are as follows:

1. Subjects tended to select vocations beyond their intellectual and achievement levels.
2. Subjects made may fantasy choices (e.g., professional ball player, actor, or astronaut).
3. Even when questioned further, 32 percent of the subjects made no specific job choices (e.g. work in Cone Mills or undecided).
4. Subjects tended to make unrealistic job selections in terms of their own educational, ability and skill levels (e.g. doctor, teacher, banker, computer operator).
5. Subjects did not differentiate among various skill levels within a job category (e.g., practical nurse, nurse's aide and registered nurse are all regarded as "nurses"; skilled mechanics and those who pump gasoline are both regarded as "mechanics").

The general findings of the investigators are not in agreement with those of Knight (1972).

IMPLICATIONS:

Even though it may be somewhat useful to a counselor to recognize that certain group differences occur with various vocational measures, individuals must be counseled on an individual basis.

In gathering information through interviews, the investigators realized that questions about job aspirations and actual job expectations may elicit quite different responses if the mentally retarded subjects perceived the difference between two concepts. The investigators made the assumption that the mentally retarded do not typically make this distinction. Rather than asking, "What kind of job could you expect to get?" the investigators

believe that obtaining general areas of interest throught the use of picture-type vocational interest measures is a more valid starting point. It is recommended that standardized tests, such as the California Picture Interest Inventory, Wide Range Interest and Opinion Survey (Jastik), and the Geist Picture Interest be used initially for this purpose.

The mentally retarded also need pre-vocational exploration, expecially in areas in which they have not observed persons actually performing these jobs. Counselors should have available to them a list of jobs appropriate for the mentally retarded in terms of educational, skill level, and other expectations.

In addition to vocational counseling, mentally retarded adolescents can often benefit from avocational counseling to help satisfy interests that may be neither practical nor possible to satisfy through a job. For example, tested interest in esthetic areas, which is frequently above average, could be at least partially satisfied through hobbies or other non related activities.

The investigators recommend the above procedures as a viable means of helping the retarded find a job that takes into account his limitations and aptitudes in addition to his stated and tested interests and special abilities.

TABLE I

Means, Standard Deviations of Wechsler Scales

	Black Females N = 43	White Females N = 43	Black Males N = 46	White Males N = 46
$\bar{X}$ VIQ	72.3	70.6	73.0	73.7
SD	8.96	9.75	8.27	8.36
$\bar{X}$ PIQ	70.7	71.5	73.2	76.5
SD	8.46	8.81	8.74	10.94
$\bar{X}$ FIQ	70.3	68.6	70.8	6.89
SD	8.07	8.56	7.94	7.35

TABLE II

Means, Percentile of Means, Standard Deviations and t Test of Means of the CPII

		Interp. Service	Natural	Mechanical	Business	Esthetic	Scientific	Verbal	Computational
Black	$\bar{X}$	26.97	16.88	12.79	34.65	23.34	13.66	14.76	13.97
Females	%tile =	50	40	20	50	40	30	30	40
N = 43	SD =	6.36	9.11	5.35	11.12	4.99	5.13	4.38	4.66
	t =	-.423	-.307	-1.056	.230	-.655	2.728*	-.733	.733
White	$\bar{X}$ =	27.57	17.51	14.51	34.12	24.18	10.87	15.50	13.18
Females	%tile =	50	40	30	50	40	20	30	30
N = 33	SD =	5.79	8.48	8.76	8.02	6.19	3.66	4.34	4.65
Black	$\bar{X}$ =	20.31	21.71	22.26	26.35	22.84	15.65	10.73	11.34
Males	%tile =	70	40	30	60	80	20	60	40
N = 46	SD	6.08	8.57	6.74	7.84	3.14	5.56	3.56	3.81
	t =	1.61	-1.73	1.33	.465	3.28*	.037	1.56	.51
White	$\bar{X}$ =	18.40	25.35	24.02	25.51	19.68	15.60	9.48	10.88
Males	%tile =	30	50	60	60	60	20	50	40
N = 46	SD =	4.97	11.20	5.69	9.17	5.66	7.12	4.02	4.70
	t =								

*significant at 1% #significant at 5%

TABLE III

Means, Percentile of Means, Standard Deviations and t Test of Means of DAT CS & A and BMCT

		DAT CS & A	BMCT
Black Females N = 43	$\bar{X}$ =	34.27	20.77
	%tile =		1
	SD =	13.89	5.28
	t =	.461	-1.175
White Females N = 43	$\bar{X}$ =	32.89	22.88
	%tile =		3
	SD =	11.45	5.89
Black Males N = 46	$\bar{X}$ =	29.50	23.60
	%tile =		5
	SD =	10.07	6.92
	t =	1.88	-1.94
White Males N = 46	$\bar{X}$ =	34.15	26.95
	%tile =		10
	SD =	13.11	8.06
Black F - M	t =		2.58#
White F - M	t =		2.83*

#significant at 5% *significant at 1%

TABLE IV

Means, Percentiles of Means, Standard Deviations and t Test of Means of STMD and PPB

		STMD	PPB			
			R	L	B	A
Black Females N = 43	$\bar{X}$ =	205.39	13.44	13.00	11.16	30.16
	%tile =	3	1	5	5	20
	SD =	39.98	2.04	3.37	4.69	3.15
	t =	.381	1.12	.28	.46	2.86*
White Females N = 33	$\bar{X}$ =	201.30	13.25	12.80	10.77	27.18
	%tile =	5	1	3	3	15
	SD =	54.47	2.01	2.08	1.65	5.79
Black Males N = 46	$\bar{X}$ =	213.80	12.76	12.95	10.69	26.86
	%tile =	15	7	10	15	15
	SD =	38.63	2.81	1.79	3.79	5.97
	t =	1.67	-1.11	3.99*	.27	-2.52#
White Males N = 46	$\bar{X}$ =	200.75	13.35	14.56	10.86	30.19
	%tile =	18	15	40	15	35
	SD =	34.86	2.14	2.02	2.21	6.49

*significant at 1% #significant at 5%

TABLE V

Means, Standard Deviations and t Test of Mean of Wide Range Achievement Test

		Reading	Spelling	Arithmetic
Black Females N = 43	$\bar{X}$ =	4.75	4.37	3.79
	SD =	2.25	1.92	1.07
	t =	1.88	.66	.01
White Females N = 33	$\bar{X}$ =	3.86	4.11	3.79
	SD =	1.76	1.45	1.09
Black Males	$\bar{X}$ =	3.18	3.25	3.39
	SD =	1.62	1.42	1.79
	t =	-1.58	1.88	-1.15
White Males	$\bar{X}$ =	3.77	3.92	3.83
	SD =	1.92	1.96	1.75

TABLE VI

Percentage Making Vocational Choice

	Black Females N = 43	White Females N = 33	Black Males N = 46	White Males N = 46	Total N = 168
1. Professional, Technical and Managerial	32.5	33.0	21.7	26.0	28.0
2. Clerical, Sales	9.3	12.1	6.5	2.1	7.1
3. Service	4.7	9.0	15.2	13.0	10.7
4. Farming	0	0	0	0	0
5. Processing	0	0	0	0	0
6. Machine trades	0	3.5	0	2.1	1.2
7. Bench Work	0	0	0	0	0
8. Structural	0	0	13.0	13.0	7.1
9. Armed Services	0	0	0	0	0
10. Unskilled	20.9	9.0	8.6	13.0	13.0
No choice	32.5	33.3	34.7	30.4	32.7
Unskilled	16.2	12.1	8.6	15.2	13.1
Semi-skilled	9.3	15.1	13.0	10.8	11.9
Skilled	41.2	39.3	39.1	47.6	41.0
No choice	31.5	33.3	34.7	30.4	32.7

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